

**PATENT**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	:	Docket: ACM 3027 P1US
James John SCHMITT et al.	:	
	:	Group Art Unit: 1793
Serial No.: 10/582,451	:	
	:	Examiner: T. M. McGuthry Banks
Filing Date: July 19, 2006	:	
	:	Confirmation Number: 6765
For: PROCESS FOR PRODUCING IRON ORE	:	
AGGLOMERATES WITH USE OF SODIUM	:	
SILICATE CONTAINING BINDER	:	

Commissioner for Patents  
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Alexandria, VA 22313-1450

**BRIEF ON APPEAL**

Further to the Notice of Appeal filed April 13, 2009, Appellants are submitting this Appeal Brief for the above-identified application. Appellant hereby requests reconsideration and reversal of the Final Rejection of claims 1-9.

In compliance with 37 C.F.R. § 41.37(a)(1), this Brief is being timely filed within the time allowed for response to the action from which the Appeal was taken.

The fees for filing a Brief in support of an Appeal under 37 C.F.R. § 40.20(b)(2), together with any extension fee required in connection with the filing of this Brief, are provided herewith.

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## TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	2
II. REAL PART IN INTEREST	3
III. RELATED APPEALS AND INTERFERENCES	4
IV. STATUS OF THE CLAIMS	5
V. STATUS OF THE AMENDMENTS	6
VI. SUMMARY OF CLAIMED SUBJECT MATTER	7
VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	9
VIII. ARGUMENT	10
A. Response to Rejection of Claims 1 and 4 under § 103(a) based on Cobett	10
B. Response to Rejection of Claims 1, 3, 4 and 9 under § 103(a) based on Field	13
C. Response to Rejection of Claims 2 and 5-8 under § 103(a) based on Field and further in view of Allen	16
D. Response to Rejection of Claims 5 and 8 under § 102(b) based on Johnson	19
IX. CONCLUSION	21
X. CLAIMS APPENDIX	22
XI. EVIDENCE APPENDIX	23
XII. RELATED PROCEEDINGS INDEX	24

**I. INTRODUCTION**

Pursuant to the provisions of 35 U.S.C. §134 and 37 C.F.R. §1.191, this paper is submitted as a brief setting forth the authorities and arguments upon which Appellants rely in support of the Appeal from the Final Rejection of claims 1-9 entered in the above-identified patent application on January 13, 2009 and maintained in the Advisory Action mailed March 24, 2009.

**II. REAL PART IN INTEREST**

The real part in interest is Akzo Nobel nv, Arnhem, The Netherlands.

### **III. RELATED APPEALS AND INTERFERENCES**

There are no prior or pending appeals, interferences, or judicial proceedings known to Appellant, the Appellants' legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

#### **IV. STATUS OF THE CLAIMS**

Claims 1-9 are currently pending. Claims 1-9 stand rejected. The rejection of claims 1-9 is appealed. No claims have been allowed.

## **V. STATUS OF THE AMENDMENTS**

An amendment after the Final Rejection was filed on March 13, 2009. That amendment has been entered for purposes of Appeal, as indicated in the Advisory Action dated March 24, 2009. The Advisory Action indicates that the amendment overcame the rejection of claim 9 under 35 U.S.C. § 103(a) over U.S. Patent No. 6,743,275 ("Cobett").

## **VI. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The present invention generally relates to a process for producing iron ore agglomerates and to a binder system for producing iron ore agglomerates. Citations to the specification providing support for the recited claim limitations are stated in this section in parentheses. An exemplary embodiment of the process for producing iron ore agglomerates, as recited in claim 1, comprises agglomerating fine iron ore particles in the presence of a binder system. (Page 1, lines 24-25). The binder system comprises a binder and an alkali metal silicate. (Page 1, line 26). Further, the alkali metal silicate is present in an amount of between 0.0001 to 0.07 percent by weight, based on the total weight of dry iron ore agglomerate. (Page 1, line 27 and page 2, line 14). Still further, the binder system is free of synthetic polymer. (Page 4, lines 1-5).

Claim 2 relates to the process of claim 1 wherein the binder is carboxymethyl cellulose. (Page 3, line 24).

Claim 3 is directed to the process of claim 1 wherein the amount of alkali metal silicate is between 0.04 and 0.07 percent by weight, based on the total weight of dry iron ore agglomerate. (Page 2, line 14 and lines 19-20).

Claim 4 relates to the process of claim 1 wherein the alkali metal silicate is sodium silicate. (Page 2, line 27).

An exemplary embodiment of a binder system for producing iron ore agglomerates, as recited in claim 5, comprises carboxymethyl cellulose and an alkali metal silicate. (Page 4, lines 17-18).

Claim 6 relates to the process of claim 2 wherein the amount of alkali metal silicate is between 0.04 and 0.07 percent by weight, based on the total weight of dry iron ore agglomerate. (Page 1, line 14 and lines 19-20).



Claim 7 is directed to the process of claim 6 wherein the alkali metal silicate is sodium silicate. (Page 2, line 27).

Claim 8 relates to the binder system of claim 5 wherein said alkali metal silicate is sodium silicate. (Page 2, line 27).

Claim 9 is directed to the process of claim 1 wherein the binder is selected from the group consisting of inorganic binders, water-soluble natural polymers, modified natural polymers and mixtures thereof. (Page 4, lines 12-26).

## **VII. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to be reviewed on Appeal are summarized as follows:

- 1) Whether claims 1 and 4 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,743,275 ("Cobett").
- 2) Whether claims 1, 3, 4 and 9 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,293,994 ("Field").
- 3) Whether claims 2 and 5-8 are unpatentable under 35 U.S.C. § 103(a) as obvious over Field and further in view of U.S. Patent No. 4,728,537 ("Allen").
- 4) Whether claims 5 and 8 are unpatentable under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,554,792 ("Johnson").

## **VIII. ARGUMENT**

In the final Office Action dated January 13, 2009, the Office rejected claims 1, 4 and 9 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,743,275 ("Cobett"). Claims 1, 3, 4 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,293,994 ("Field"). Claims 5 and 8 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,554,792 ("Johnson"). Claims 2 and 5-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Field and further in view of U.S. Patent No. 4,728,537 ("Allen"). Appellants respectfully traverse these rejections and submit that the appealed claims stand improperly rejected for at least the reasons set forth below. Accordingly, the rejection of the appealed claims of record should be reversed.

### **A. Response to Rejection of Claims 1 and 4 under § 103(a) based on Cobett**

The Office rejects claims 1 and 4 (the rejection of claim 9 having been withdrawn as indicated in the Advisory Action dated March 24, 2009) as obvious over Cobett. In the Response to Arguments section of the Office Action dated January 13, 2009, the Office maintained the rejection stating that "the disclosed amount of sodium silicate incorporates the entire range of at most 10%." (Office Action, page 4). Further, the Office stated that "Cobett does not teach any lower limit of alkali metal silicate." (Office Action, page 4). Rather, the Office asserted that nonpreferred embodiments and alternative embodiments constitute prior art, and that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. (Office Action, page 4). In responding to Appellants arguments addressing the final rejection, the Office merely stated, "[r]egarding the rejection of Claims 1 and 4 under 35 U.S.C. § 103(a) over Cobett, according to MPEP § 2141.03, a prior art reference must be considered in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." (Advisory Action, page 2). In view of the Office's rejection and advisory comments, Appellants

respectfully disagree that Cobett renders Appellants' invention, as recited in claim 1, obvious.

As a preliminary matter, Appellants are well aware of the quoted section of MPEP § 2143.03 identified in the Advisory Action. Appellants fail to understand, however, how the mere quotation of such text is responsive to Appellants arguments or how it provides the requisite "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." See *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (citing *In re Lee*, 277 F.3d 1338, 1343-46 (Fed. Cir. 2002) and *In re Rouffett*, 149 F.3d 1350, 1355-59 (Fed. Cir. 1998)). In addition, it is not understood how this quoted section of the MPEP is applicable to situation at hand. If the disclosure of Cobett upon which the Office relies teaches away from Appellants' invention, such would be a factor evidencing the nonobviousness of Appellants' invention, and not evidence supporting the Office's obviousness rejection. Appellants submit that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. See *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Accordingly, Appellants submit that the Office has failed to meet its burden by relying on Cobett.

Notwithstanding the above, Appellants submit that Cobett, at col. 2, lines 1-3 and claim 1, does not disclose sodium silicate in a range of at most 10%, but rather, discloses the range of at most 20%. Appellants acknowledge that according to M.P.E.P. § 2144.05, "a prior art reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness.' *In re Peterson*, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). See also *In re Harris*, 409 F.3d 1339, 74 USPQ2d 1951 (Fed. Cir. 2005). . . ." Thus, even if the Office is found to have established a *prima facie* case of obviousness, according to M.P.E.P. § 2144.05(III), "[a]pplicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range." Here, Appellants submit that the range as recited in claim 1 is patentably distinguishable over the broader range allegedly disclosed in Cobett for the following reasons.

Appellants have included in their specification examples that evidence the improved performance of Appellants' claimed process utilizing the claimed binder system over processes utilizing binder systems above 0.08, such as disclosed in Cobett. Specifically, as shown in Table 1, Comparative Example 2 includes sodium silicate in an amount of 0.2%, which is above Appellants' claimed range of 0.0001 to 0.07%, but falls within the broad range disclosed in Cobett. Examples 1-4, as shown in Table 1, include sodium silicate in amounts of 0.03, 0.05, 0.06 and 0.08, respectively. Each of the Comparative Examples and Examples were made by the same process. Based on the test results identified in Table 2, "the pellets of Examples 1-4 show an improvement in wet drop number and only a slight increase in deformation, whereas the pellets of Comparative Example 2 reveal a significantly higher deformation and wet drop number." (Specification, at page 11, lines 8-11). Consequently, as discussed in Appellants' specification, the pellets of Comparative Example 2 are deformed to a higher extent in the steel making process, rendering the process for preparing fired pellets less efficient than the process of the present invention. (Specification, at page 11, lines 11-14). Moreover, the green pellets of Examples 2-4 are smooth and non-sticking, whereas the green pellets of Comparative Example 2 are smooth and sticky. This characteristic undesirably causes clustering of the pellets during processing.

Additionally, in Example 1 of Cobett, in the total amount of additives to the ferrous metal particles, the amount of sodium silicate solution is much higher than 0.0001 to 0.07 %, as recited in Appellants' claim 1. Specifically, Example 1 includes about 4 wt% of sodium silicate based on dry weight, which is much higher than Appellants' claimed upper limit of 0.07%. According to Example 1, the briquette was prepared by combining 90% by weight of ferrous metal particles with 10% by weight of a solution of aqueous sodium silicate containing 42% by weight solids. Example 1, however, also notes that acceptable solids contents of the aqueous sodium silicate solutions ranged from as low as about 20% to as high as 50%.

Furthermore, Appellants have identified generally that a high amount of alkali metal silicate, i.e. above 0.08%, is undesirable, because silicates can slow down the

reduction process in steel making operations by blocking the pathways the reducing gases use to permeate the pellet, which leads to an increase in energy costs. (See e.g. col. page 1, lines 5-19). Furthermore, the use of such high amounts of alkali metal silicate results in green pellets that have a high tendency to deform, which in turn may lead to pellets of different size and shape, resulting in an inefficient process for preparing fired pellets. *Id.* In contrast, Cobett does not attach any significance to its disclosed sodium silicate range other than to state that it can be as high as 20%. Thus, where Appellants have identified a particular range for their sodium silicate for their process that provides unexpected, improved results, Cobett merely discloses a broad range that, as Appellants have shown, includes a very large portion, i.e. at least above 0.08% to 20%, that is undesirable and results in poorer performance than Appellants' invention. Accordingly, Appellants submit although Cobett's disclosed range may overlap Appellants' claimed range, nowhere in Cobett are there specific examples or any other indication or suggestion that the amount of sodium silicate in the range claimed by Appellant would have been expected to perform any better than the portion of Cobett's range that is outside the scope of Appellants' claimed range.

Appellants submit, therefore, that independent claim 1 and claims 4 and 9, which depend from claim 1, are not obvious in view of Cobett. The rejections therefore, should be reversed.

**B. Response to Rejection of Claims 1, 3, 4 and 9 under § 103(a) based on Field**

The Office rejects claims 1, 3, 4 and 9 as obvious over Field. The Office asserts that Field teaches fire mineral pellets that include alkali metal silicate in an amount above 0.08%. (Office Action, page 3). Further, the Office asserts that the pellets also include cellulosic polymers. (Office Action, page 3). However, the Office acknowledges that Field does not teach the claimed range. (Office Action, page 3). However, the Office asserts that "a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would

have expected them to have the same properties. MPEP § 2144.05.” (Office Action, page 5).

Furthermore, in the Advisory Action, in responding to Appellants arguments filed in the response dated March 13, 2009, the Office states that “applicant provided an example of 0.08% in the specification (page 11, line 15 to page 12, line 2).” (Advisory Action, page 2). Further the Office states that “[t]his example is grouped together with other examples as having desirable properties.” (Advisory Action, page 2).

Appellants submit that the when Field is read as a whole, i.e. in its entirety, Field would not have led one of ordinary skill in the art to arrive at Appellants’ invention. Appellants submit that according to Field, its disclosed binder comprises alkali metal silicate and the amount which is used is defined as “a dry weight amount which is either (a) above 0.13% based on moist mix or (b) above 0.08% based on moist mix and at least three times the dry weight of the substantially water soluble organic polymer.” (emphasis added). (See Field, col. 1, lines 59-65). Thus, whereas Appellants’ invention recites that its alkali metal silicate is present in an amount of between 0.0001 to 0.07 percent by weight, Field teaches alkali metal silicate in an amount above 0.08%. Accordingly, where Appellants have claimed lower amounts of alkali metal silicate, Field teaches using higher amounts. In addition, as disclosed in Appellants specification, at page 1, lines 5-19, the amount of alkali metal silicate taught by Field is undesirable.

As argued above with respect to Cobett, Appellants have identified that amounts of alkali metal silicate above 0.08% are undesirable for several reasons. In contrast, Appellants’ process, which includes alkali metal silicate present in an amount of between 0.0001 and 0.07 percent by weight, provides unexpected improvements in performance, e.g. in wet drop number and deformation characteristics. Further, Appellants’ invention leads to iron ore agglomerates with increased cold compression strength, preheat strength, and dry crush strength relative to the use of conventional binder systems comprising the same binder. In contrast, the conventional state of the art binder systems, such as Field (and Cobett), promote the use of a relatively larger

amount of alkali metal silicate, and such systems exhibit a significant increase in the degree of deformation, which is undesirable.

Field, like Cobett, does not disclose or suggest that a process that includes agglomerating fine iron ore particles in the presence of alkali metal silicate below 0.08% results in such improved properties. Rather, Field prefers higher amounts, such as at least 0.15%, at least 0.18% and at least 0.2%, suggesting 0.7% and 0.5% are often convenient upper limits. (Field, at col. 2, lines 18-23). Field also discloses that “[i]f inadequate alkali metal compound is used, there will be inadequate improvement in performance, for instance in pellet growth and/or in the properties of the green pellets or the fired pellets.” (Field, at col. 2, lines 24-27).

Although it is acknowledged generally that references may be prior art for all that they disclose, and not just what is preferred or exemplified, such exemplary amounts in Field are evidence of what Field when read as a whole, would have suggested to one of ordinary skill in the art. That is, where the trend exemplified in Field is to use amounts of sodium silicate well above its lowest disclosed limit, which is again above Appellants’ claimed upper limit, one of ordinary skill in the art would have been led to use amounts of alkali metal silicate much higher than the range claimed by Appellants, and thus away from Appellants’ invention.

Thus, when read as a whole, Appellants submit that Field would have led one of ordinary skill in the art away from amounts of alkali metal silicate below 0.08, such as between 0.0001 and 0.07 as recited in Appellants’ claim 1. Moreover, as evidenced in Appellants’ Examples, such higher amounts have been found to result in significantly poorer performance. Accordingly, although claim 1 recites a range of alkali metal silicate close to that of Field, the results achieved by Appellants’ invention, as recited in claim 1, are unexpected, particularly in light of the disclosure of Field.

Appellants submit, therefore, that independent claim 1 and claims 3, 4 and 9, which depend from claim 1, are patentable over Field.



**C. Response to Rejection of Claims 2 and 5-8 under § 103(a) based on Field and further in view of Allen**

The Office rejects claims 2 and 5-8 as obvious over Field and further in view of Allen. Specifically, the Office asserts that Field discloses the invention substantially as claimed, but acknowledges that Field “does not specifically disclose using carboxymethyl cellulose as in Claim 2.” (Office Action, page 3). To supply this missing feature, the Office turns to Allen for the alleged disclosure “that carboxymethyl cellulose is a type of cellulosic binder.” (Office Action, page 3).

As a preliminary matter, claim 2 depends from claim 1, while claim 5 is independent and claim 8 depends from claim 5. Accordingly, for at least the reasons that claim 1 is patentable, as noted above, claim 2 is also patentable.

Further, in neither the final Office Action nor the Advisory Action has the Office explained why the rejection based on the combination of Field and Allen has been maintained. In the Advisory Action, the Office notes that “[r]egarding the assertion that the examiner did not consider applicants’ applicants’ [sic] arguments, the examiner refers applicant to pages 4 and 5 of the Office Action mailed 1/13/2009 for Johnson, Cobett and Field.” (Advisory Action, page 2). As Appellants have noted repeatedly, it is the response to the rejection based on the combination of Field and Allen that the Office has failed to respond to. According to M.P.E.P. § 707.07(f), “[w]here the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant’s argument and answer the substance of it.” (emphasis added). Here, the Office has failed to provide such an explanation. With the absence of such explanation, Appellants submit that the rejection has not been properly made and that the rejection should be reversed as improper. For at least this reason, claims 2 and 5-8 are patentable over Field in combination with Allen.

Notwithstanding, Appellants submit that Field relates to a process of making fired mineral pellets as discussed above. Although cellulosic polymers are mentioned as substantially water soluble organic polymers, carboxymethyl cellulose is not disclosed.

Rather, the preferred binders of Field are acrylamides. Allen discloses a process for producing mineral ore agglomerates; however, binders containing a silicate are not disclosed.

Appellants acknowledge that “[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989). However, the Office's reliance on Allen merely for the disclosure that “carboxymethyl cellulose is a type of cellulosic binder,” ignores the caselaw on which the Office relies to support its rejection, i.e. “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. (emphasis in original) M.P.E.P. § 2141.03 (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)).

In this instance, the Office has not relied on a mere alternative or nonpreferred embodiment disclosed in Allen. Rather, the passages of Allen on which the Office relies criticizes, discredits and otherwise discourages one of ordinary skill in the art from using cellulosic binders, such as carboxymethyl cellulose. As set forth in the M.P.E.P. § 2141.02(VI),

the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed . . . . *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Consequently, where Allen does criticize, discredit, or otherwise discourage the use of cellulosic binders, Appellants submit that Allen teaches away from the combination of Field and Allen to arrive at Appellants' invention. Allen is replete with such criticism. For example, according to Allen,

“[a] difficulty with powdered cellulosic binders such as carboxymethyl cellulose is that the irregular particle shape and size distribution is such that the powder does not flow freely. Instead the dry particles tend to

clump together rather than flow over one another. As a result it is difficult to achieve uniform supply of the low dosages that are required. Another problem is that the amount of cellulosic binder that has to be used for adequate strength tends to be too high to be cost effective. Another problem with some cellulosic polymers is that they can reduce surface tension, and this appears to be undesirable in pellet formation.

In practice the use of cellulosic binders has not been widely adopted, presumably because of these or other problems. At present therefore there is very little use of organic binders and bentonite is still very widely used, despite the long-recognised disadvantages and decreasing availability of suitable grades of bentonite and despite the long-established possibility of using organic binder. (emphasis added) (Allen, col. 1, line 66 – col. 3, line 17).

In addition, at col. 2, lines 64-65, Allen indicates that use of polymers based on cellulose, particularly those sold under the trade name Peridur, which was believed to be carboxymethyl cellulose, had an unsatisfactorily low spalling temperature.

Accordingly, Allen does not merely disclose that cellulosic binders are nonpreferred or alternative embodiments to its touted binders. Rather, Allen teaches away from the use of cellulosic binders, such as carboxymethyl cellulose, by describing numerous alleged problems with their use. The Office cannot simply ignore Allen's critical statements that teach away from Appellants' invention on the one hand, and on the other hand pick and choose only that portion of the disclosure it deems supports its rejection to the exclusion of the rest. Clearly, such a rejection fails to consider Allen "in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." The Office's rejection, therefore, is improper and should be reversed.

For at least the above reasons, Appellants submit that a *prima facie* case of obviousness has not been made. Therefore, claims 2 and 5-8 are patentable over Field in combination with Allen.

**D. Response to Rejection of Claims 5 and 8 under § 102(b) based on Johnson**

The Office rejects claims 5 and 8 as anticipated by Johnson. Specifically, in the Response to Arguments section of the Office Action, at page 4, the Office maintained the rejection of independent claim 5 by alleging that the recitation “for . . . [producing iron ore agglomerates]” is merely an intended use of the claimed binder system. In the Advisory Action, the Office merely reiterates the Office’s position. (Advisory Action, page 2). Thus, the Office asserts that this language is not given patentable weight. Moreover, the Office further asserts that “because the composition in Johnson is the same as claimed, it would be capable of performing the same intent.” (Office Action, page 4). Appellants respectfully disagree that Johnson anticipates claim 5.

More specifically, claim 5 as amended, recites “[a] binder system for producing iron ore agglomerates.” The binder system comprises carboxymethyl cellulose and an alkali metal silicate. Appellants disagree, however, with the Office’s premise that the preamble recitation “for producing iron ore agglomerates” is merely intended use. According to the Federal Circuit, “[i]f the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is ‘necessary to give life, meaning, and vitality’ to the claim, then the claim preamble should be construed as if in the balance of the claim.” See M.P.E.P. § 2111.02 (citing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999)). Further, in *Poly-America LP v. GSE Lining Tech. Inc.*, the court stated that “a ‘[r]eview of the entirety of the ‘047 patent reveals that the preamble language . . . does not state a purpose or an intended use of the invention, but rather discloses a fundamental characteristic of the claimed invention that is properly construed as a limitation of the claim.’” , in *Poly-America LP v. GSE Lining Tech. Inc.*, 383 F.3d 1303, 1310, 72 USPQ2d 1685, 1689 (Fed. Cir. 2004). Here, Appellants submit that the preamble of claim 5 is not merely directed to an intended use, but defines a fundamental characteristic of the claimed invention, i.e. that the claimed binder system is required for producing iron ore agglomerates. This distinguishes the claimed

composition from Johnson, which is not capable of producing iron ore agglomerates, as the Office alleges.

Johnson discloses a welding electrode and a coating in which the coating contains about 10 – 15 parts by weight of a binder consisting of an alkali metal silicate and about 0.5 parts by weight of sodium carboxymethyl cellulose. (See Johnson, abstract). Consequently, the amount of CMC in the binder is between and 3.33 and 5 wt% and the amount of alkali metal silicate in the binder is between 95 and 96.66 wt%. Contrary to the Office's assertions, Appellants submit that the binder disclosed in Johnson is not disclosed or suggested as for producing iron ore agglomerates. Rather, the binder disclosed in Johnson would lead to excessive clustering and severe deformation instead of controlled growth that is needed to produce an agglomerate.


As set forth in the M.P.E.P. § 2131, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Here, Appellants submit that Johnson fails to disclose Appellants' identical invention and is also not capable of producing iron ore agglomerates. Indeed, claim 5 identifies a patentable distinction over Johnson by setting forth a fundamental characteristic of the claimed invention, i.e. the binder system is for producing iron ore agglomerates.

Accordingly, because Johnson discloses a coating for a welding electrode and not a composition for producing iron ore agglomerates, Johnson cannot anticipate claim 5. Moreover, claim 8, which depends from claim 5, is also not anticipated by Johnson for at least the same reasons that claim 5 is not anticipated by Johnson. Reversal of the rejection of claims 5 and 8 is therefore respectfully requested.

**IX. CONCLUSION**

In view of the arguments presented herein Appellant respectfully submits that appealed claims 1-9 stand improperly rejected. The rejection of these appealed claims of record should be reversed with instructions to allow these claims over Cobett, Field, Johnson and Allen. Such action is hereby respectfully requested.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "James C. Abruzzo".

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## **X. CLAIMS APPENDIX**

1. A process for producing iron ore agglomerates comprising agglomerating fine iron ore particles in the presence of a binder system that comprises a binder and an alkali metal silicate, wherein the alkali metal silicate is present in an amount of between 0.0001 to 0.07 percent by weight, based on the total weight of dry iron ore agglomerate, and wherein the binder system is free of synthetic polymer.
2. The process of claim 1 wherein the binder is carboxymethyl cellulose.
3. The process of claim 1 wherein the amount of alkali metal silicate is between 0.04 and 0.07 percent by weight, based on the total weight of dry iron ore agglomerate.
4. The process of claim 1 wherein the alkali metal silicate is sodium silicate.
5. A binder system for producing iron ore agglomerates comprising carboxymethyl cellulose and an alkali metal silicate.
6. The process of claim 2 wherein the amount of alkali metal silicate is between 0.04 and 0.07 percent by weight, based on the total weight of dry iron ore agglomerate.
7. The process of claim 6 wherein the alkali metal silicate is sodium silicate.
8. The binder system of claim 5 wherein said alkali metal silicate is sodium silicate.
9. The process of claim 1 wherein the binder is selected from the group consisting of inorganic binders, water-soluble natural polymers, modified natural polymers and mixtures thereof.

**XI. Evidence Appendix**

None.



**XII. Related Proceedings Index**

None.